<110> Felsenfeld, Dan P.
Verse-Pierluissi, Maria A.

<120> METHODS AND AGENTS FOR TREATING AXONAL DAMAGE, INHIBITION OF NEUROTRANSMITTER RELEASE AND PAIN TRANSMISSION, AND BLOCKING CALCIUM INFLUX IN NEURONS

<130> 02420/100M761-US1

<150> 60/480,092
<151> 2003-06-19

<150> PCT/US04/19934
<151> 2004-06-21

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<170> PatentIn version 3.3

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35 40 45

Pro Thr Asp Asp Ile Ser Leu Lys Cys Glu Ala Arg Gly Arg Pro Gln
50 55 60

Val Glu Phe Arg Trp Thr Lys Asp Gly Ile His Phe Lys Pro Lys Glu
65 70 75 80

Glu Leu Gly Val Val Val His Glu Ala Pro Tyr Ser Gly Ser Phe Thr
85 90 95

Ile Glu Gly Asn Asn Ser Phe Ala Gln Arg Phe Gln Gly Ile Tyr Arg
100 105 110

Cys Tyr Ala Ser Asn Asn Leu Gly Thr Ala Met Ser His Glu Ile Gln
115 120 125

Leu Val Ala Glu Gly Ala Pro Lys Trp Pro Lys Glu Thr Val Lys Pro
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Val Glu Val Glu Glu Gly Glu Ser Val Val Leu Pro Cys Asn Pro Pro
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Pro Ser Ala Ala Pro Leu Arg Ile Tyr Trp Met Asn Ser Lys Ile Leu
165 170 175

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His Ile Lys Gln Asp Glu Arg Val Ser Met Gly Gln Asn Gly Asp Leu
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Tyr Phe Ala Asn Val Leu Thr Ser Asp Asn His Ser Asp Tyr Ile Cys
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Asn Ala His Phe Pro Gly Thr Arg Thr Ile Ile Gln Lys Glu Pro Ile
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Asp Leu Arg Val Lys Pro Thr Asn Ser Met Ile Asp Arg Lys Pro Arg
225                 230                 235                 240

Leu Leu Phe Pro Thr Asn Ser Ser Ser His Leu Val Ala Leu Gln Gly
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Gln Ser Leu Ile Leu Glu Cys Ile Ala Glu Gly Phe Pro Thr Pro Thr
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Ile Lys Trp Leu His Pro Ser Asp Pro Met Pro Thr Asp Arg Val Ile
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Tyr Gln Asn His Asn Lys Thr Leu Gln Leu Leu Asn Val Gly Glu Glu
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Asp Asp Gly Glu Tyr Thr Cys Leu Ala Glu Asn Ser Leu Gly Ser Ala
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Arg His Ala Tyr Tyr Val Thr Val Glu Ala Ala Pro Tyr Trp Leu Gln
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Lys Pro Gln Ser His Leu Tyr Gly Pro Gly Glu Thr Ala Arg Leu Asp
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Cys Gln Val Gln Gly Arg Pro Gln Pro Glu Val Thr Trp Arg Ile Asn
        355                 360                 365

Gly Met Ser Ile Glu Lys Val Asn Lys Asp Gln Lys Tyr Arg Ile Glu
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Gln Gly Ser Leu Ile Leu Ser Asn Val Gln Pro Ser Asp Thr Met Val
385                 390                 395                 400

Thr Gln Cys Glu Ala Arg Asn Gln His Gly Leu Leu Leu Ala Asn Ala
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Tyr Ile Tyr Val Val Gln Leu Pro Ala Arg Ile Leu Thr Lys Asp Asn
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485 490 495

Gln Ala Ala Asn Asp Gln Asn Asn Val Thr Ile Leu Ala Asn Leu Gln
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Val Lys Glu Ala Thr Gln Ile Thr Gln Gly Pro Arg Ser Thr Ile Glu
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Lys Lys Gly Ala Arg Val Thr Phe Thr Cys Gln Ala Ser Phe Asp Pro
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Glu Arg Gly Asp Ser Asp Lys Tyr Phe Ile Glu Asp Gly Gln Leu Val
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Ile Gln Ser Leu Asp Tyr Ser Asp Gln Gly Asn Tyr Ser Cys Val Ala
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Ser Thr Glu Leu Asp Glu Val Glu Ser Arg Ala Gln Leu Leu Val Val
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Gly Ser Pro Gly Pro Val Pro His Leu Glu Leu Ser Asp Arg His Leu
610 615 620

Leu Lys Gln Ser Gln Val His Leu Ser Trp Ser Pro Ala Glu Asp His
625 630 635 640

Asn Ser Pro Ile Glu Lys Tyr Asp Ile Glu Phe Glu Asp Lys Glu Met
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Ala Pro Glu Lys Trp Phe Ser Leu Gly Lys Val Pro Gly Asn Gln Thr
660 665 670

Ser Thr Thr Leu Lys Leu Ser Pro Tyr Val His Tyr Thr Phe Arg Val

675 680 685

Thr Ala Ile Asn Lys Tyr Gly Pro Gly Glu Pro Ser Pro Val Ser Glu
690 695 700

Thr Val Val Thr Pro Glu Ala Ala Pro Glu Lys Asn Pro Val Asp Val
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Arg Gly Glu Gly Asn Glu Thr Asn Asn Met Val Ile Thr Trp Lys Pro
725 730 735

Leu Arg Trp Met Asp Trp Asn Ala Pro Gln Ile Gln Tyr Arg Val Gln
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Trp Arg Pro Leu Gly Lys Gln Glu Thr Trp Lys Glu Gln Thr Val Ser
755 760 765

Asp Pro Phe Leu Val Val Ser Asn Thr Ser Thr Phe Val Pro Tyr Glu
770 775 780

Ile Lys Val Gln Ala Val Asn Asn Gln Gly Lys Gly Pro Glu Pro Gln
785 790 795 800

Val Thr Ile Gly Tyr Ser Gly Glu Asp Tyr Pro Gln Val Ser Pro Glu
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Leu Glu Asp Ile Thr Ile Phe Asn Ser Ser Thr Val Leu Val Arg Trp
820 825 830

Arg Pro Val Asp Leu Ala Gln Val Lys Gly His Leu Arg Gly Tyr Asn
835 840 845

Val Thr Tyr Trp Trp Lys Gly Ser Gln Arg Lys His Ser Lys Arg His
850 855 860

Val His Lys Ser His Met Val Val Pro Ala Asn Thr Thr Ser Ala Ile
865 870 875 880

Leu Ser Gly Leu Arg Pro Tyr Ser Ser Tyr His Val Glu Val Gln Ala
885 890 895

Phe Asn Gly Arg Gly Leu Gly Pro Ala Ser Glu Trp Thr Phe Ser Thr
900 905 910

Pro Glu Gly Val Pro Gly His Pro Glu Ala Leu His Leu Glu Cys Gln
915 920 925

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Gly Val Leu Thr Gly Tyr Leu Leu Ser Tyr His Pro Leu Asp Gly Glu
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Ser Lys Glu Gln Leu Phe Phe Asn Leu Ser Asp Pro Glu Leu Arg Thr
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His Asn Leu Thr Asn Leu Asn Pro Asp Leu Gln Tyr Arg Phe Gln Leu
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Gln Ala Thr Thr Gln Gln Gly Pro  Gly Glu Ala Ile Val  Arg Glu Gly
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Gly Thr  Met Ala Leu Phe Gly  Lys Pro Asp Phe Gly  Asn Ile Ser
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Val Thr  Ala Gly Glu Asn Tyr  Ser Val Val Ser Trp  Val Pro Arg
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Glu Gly  Gln Cys Asn Phe Arg  Phe His Ile Leu Phe  Lys Ala Leu
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Pro Glu  Gly Lys Val Ser Pro  Asp His Gln Pro Gln  Pro Gln Tyr
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Asp Thr  Lys Tyr Glu Ile His  Leu Met Arg Glu Lys  Val Leu Leu
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His His  Leu Ala Val Lys Thr  Asn Gly Thr Gly Pro  Val Arg Val
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Ser Thr  Thr Gly Ser Phe Ala  Ser Glu Gly Trp Phe  Ile Ala Phe
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Val Ser  Ala Ile Ile Leu Leu  Leu Leu Ile Leu Leu  Ile Leu Cys
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Phe Ile  Lys Arg Ser Lys Gly  Gly Lys Tyr Ser Val  Lys Asp Lys
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Glu Asp  Thr Gln Val Asp Ser  Glu Ala Arg Pro Met  Lys Asp Glu
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Val Gln Phe Asn Glu Asp Gly Ser Phe Ile Gly Gln Tyr Ser Gly
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